

Notice of Allowability

Application No.

09/967,301

Examiner

Hope A. Robinson

Applicant(s)

STUBBS ET AL.

Art Unit

1653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1/25/05.
2. ☒ The allowed claim(s) is/are 11,13-18 and 26-33.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 01142005.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>1/25/05</u> . |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>12/10/01</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

1. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization of this Examiner's amendment was given in a telephone interview with Mr. Yonggang Ji on January 25, 2005.

3. The claims have been amended as follows:

Claim 11 (Currently Amended) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) and that has an amino acid sequence which is modified by amino acid substitution compared with the amino acid sequence of wild type *Aequorea victoria* Green Fluorescent Protein having the sequence of SEQ ID NO:2, said modified fluorescent protein comprising:

- i) an amino acid substitution at position F64;
- ii) an amino acid substitution at position E222; and
- iii) an amino acid substitution at position S175;

wherein said modified GFP provides increased fluorescent intensity as compared to wild type GFP.

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Claim 14 (Currently Amended) A nucleic acid molecule comprising a nucleotide sequence encoding a fusion protein, wherein said fusion protein further comprises a protein of interest fused to a Green Fluorescent Protein (GFP) ~~fluorescent protein and~~ that has an amino acid sequence which is modified by amino acid substitution compared with the amino acid sequence of wild type *Aequorea victoria* Green Fluorescent Protein having the sequence of SEQ ID NO:2, said modified fluorescent protein ~~including~~ comprising:

- i) an amino acid substitution at position F64;
- ii) an amino acid substitution at position E222; and
- iii) an amino acid substitution at position S175;

wherein said modified GFP provides increased fluorescent intensity as compared to wild type GFP.

Claim 26 (Currently Amended) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) and that has an amino acid sequence which is modified by amino acid substitution compared with the amino acid sequence of wild type *Aequorea victoria* Green Fluorescent Protein having the sequence of SEQ ID NO:2, said modified fluorescent protein consisting of:

- i) an amino acid substitution at position F64;
- ii) an amino acid substitution at position S65; and
- iii) an amino acid substitution at position S175;

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wherein said modified GFP provides increased fluorescent intensity as compared to wild type GFP.

Claim 28 (Currently Amended) A nucleic acid molecule comprising a nucleotide sequence encoding a fusion protein, wherein said fusion protein further comprises a protein of interest fused to a Green Fluorescent Protein (GFP) and that has an amino acid sequence which is modified by amino acid substitution compared with the amino acid sequence of wild type *Aequorea victoria* Green Fluorescent Protein having the sequence of SEQ ID NO:2, said modified fluorescent protein including comprising:

- i) an amino acid substitution at position F64;
- ii) an amino acid substitution at position S65; and
- iii) an amino acid substitution at position S175;

wherein said modified GFP provides increased fluorescent intensity as compared to wild type GFP.

Claim 33 (Currently Amended) A nucleic acid molecule comprising a nucleotide sequence encoding a Green Fluorescent Protein (GFP) and that has an amino acid sequence which is modified by amino acid substitution compared with the amino acid sequence of wild type *Aequorea victoria* Green Fluorescent Protein, wherein the amino acid Ser at position 65 has been substituted by an amino acid selected from the group consisting of Gly, Ala, Leu, Cys, Val, Ile and Thr.

Reasons for Allowance

4. The following is an Examiner's statement of reasons for allowance:

The applicant has claimed a nucleic acid encoding a GFP that has a modified amino acid sequence comprising substitutions at positions F64; E222 and S175 (see for example claim 11). Applicant's arguments presented on December 16, 2004 have been reconsidered (see page 13 of the remarks). A review of the Tsien et al. patent indicates that the following positions are mutated in SEQ ID NO:4: S65G, S72A and T203Y which provides evidence that applicant's interpretation of the shift that occurred in the SEQ ID NO:4 as a result of the insertion of a valine residue is the same interpretation in the patent (see column 2, lines 45-49). Given that the insertion of the valine in SEQ ID NO:4 shifts the sequence, the mutation at positions F64, E222 and S175 are not taught by Tsien et al. In addition, a search of commercial databases did not produce any prior art that suggests or teaches the claimed nucleic acid. Thus, the claimed invention is novel and nonobvious over the prior art of record.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

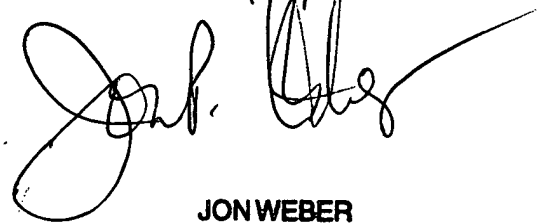
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hope A. Robinson whose telephone number is 571-272-0957. The examiner can normally be reached on Monday-Friday from 9:00 a.m. to 6:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Jon P. Weber, can be reached at (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hope Robinson, MS

Patent Examiner

HR
1/25/05


JON WEBER
SUPERVISORY PATENT EXAMINER